



A Common Sense Strategy to Protect Your Property

First Edition

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Today's Flood Levels Are NOT Tomorrow's Flood Levels



Red River flooding causes damage including fires in downtown Grand Forks ND, 1997.

The No Adverse Impact approach to floodplain management assumes that the harm caused by construction on neighboring properties and communities can no longer be ignored.

"This is the second or third 100 year flood in the last eight years. I'm ready... I'm gone."
- Flooded Property Owner

NAI Benefits YOU!

As our country grows, flood damages are increasing. Construction anywhere in the watershed can increase the risk of flooding to other properties, even those that have never flooded in the past. Federal standards do not fully consider the impact of new development, so communities should implement a higher standard to protect themselves. The No Adverse Impact approach to development will not only reduce flood losses, but will save lives, protect property and reduce the amount of your tax dollars that are spent on recovery.



What Does This Mean To You?

If your community's current construction guidelines simply reflect the minimum national standards, or if the guidelines only address new construction, the net result will be future increases in flood risk to property somewhere in your watershed. Flood risk includes increases in flood levels, flood velocity, erosion and sedimentation. Your property could be affected. The potential for your property, your downtown, your shopping centers, your roads and your hospitals to be impacted by flooding keeps changing as new construction occurs throughout the watershed. Because community assets could be affected by flood damage too, everyone should get involved in flood planning, not just those property owners who live next to a river or stream.

What Can You Do? To Start...

- Learn about the potential for your property to flood by meeting with your local floodplain administrator.
- Understand the impact of on-going construction and new development.
- Motivate your local officials to take your flood potential seriously, study your flood conditions and make necessary changes to local policy.
- Influence your local construction and development community to consider the downstream impacts of their actions.
- Reach out to other community members so that you have the collective approach "This is how I can help to protect my property and my community."

Return On Investment

Homeowners who installed flood protection measures prevented an average of \$9,900 in damage.^{††}

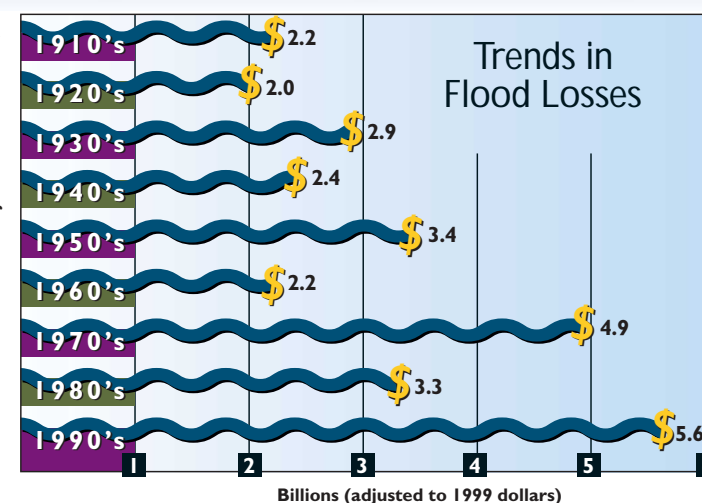
Jim and Irma Perry are moving as a part of FEMA and the State of Pennsylvania's buy-out project that will help prevent future flood losses in Bucks County.

Flood Losses Worsening: Unnecessary trend costs you billions of dollars every year.

Annual flood losses in the United States continue to worsen despite 75 years of federal flood control and 30 years of the National Flood Insurance Program (NFIP). Our average annual flood losses are currently estimated at \$6 billion. Your tax dollars pay for the recovery from this damage. Although floods are the single most predictable natural hazard, the cost of flood damages per capita has doubled over the past century. The general trend is for flood losses to increase every decade.

Most current management approaches for reducing flood losses allow for construction to occur without considering the adverse impacts on other properties within the watershed or on future flooding potential. This has contributed to steadily rising flood losses and is increasing the potential for future flood damage.

(See **Losses Worsening** on Page 4)



Since the early 1900's flood losses have continued to rise. The average annual damages from floods in the teens was \$2.2 billion. In the 1990's the average annual damage from floods was \$5.6 billion.

Many Communities are Taking Action Now!



Storm water detention system at U.S. Postal Service facility, Baton Rouge, Louisiana



BREC's Bluebonnet Swamp Nature Center, Baton Rouge, Louisiana

Based on our understanding that flood conditions will get worse and will impact more and more people, we encourage the use of inexpensive techniques that can lessen development impacts on flooding; these are called mitigation techniques. Is your community using mitigation techniques?

Mitigation techniques are used to lessen the adverse impact of construction. Types of mitigation actions to reduce flood losses include those that modify people's activities (usually a nonstructural measure such as elevation or land use planning) or modify the flood (usually a structural measure such as a dam or levee). A No Adverse Impact approach to flood management will likely contain elements of each.



The floodplain of the Little Sugar Creek in Charlotte, North Carolina is preserved as open space and is used for recreation during dry periods. During high flows, the floodplain stores flood waters.

There are many examples of communities around the country that are striving for a No Adverse Impact approach. These communities have recognized that development activity anywhere in the watershed can adversely impact properties elsewhere in the watershed, not just in the floodplain.

DuPage County in Illinois chose to strengthen comprehensive regulations in their approach to managing flood problems. Maricopa County in Arizona focused on planning and management, while the Charlotte-Mecklenburg region in North Carolina stressed identifying the hazard area based on future developed conditions.

No Adverse Impact: A Do No Harm Policy

The No Adverse Impact approach strives to ensure that the actions of one property owner do not increase the flood risk of other property owners. This approach will especially benefit those property owners that are not currently in regulated flood areas, but who could be in the future.

This new approach would require those who alter flooding conditions to mitigate the impact of their actions on property owners and adjacent communities. The No Adverse Impact approach focuses on planning for and lessening flood impacts resulting from land use changes. It is essentially a "do no harm" policy that will significantly decrease the creation of new flood damages. A citizen would never allow a neighbor to use her yard as a dumping ground for garbage. No Adverse Impact suggests that we hold our neighbors to the same standard when flooding is concerned. In essence, No Adverse Impact means that your neighbor should build in such a way that does not increase the risk of flooding to your property or others. Examples of this "wise use" or the "most beneficial use" would be using the floodplain as dedicated open space for flood storage and low impact uses such as recreation.

(See **No Harm** on Page 4)



Did you know?

Preserving flood-prone areas as open space saved between \$47,500 and \$111,000 in losses per acre.^{††}

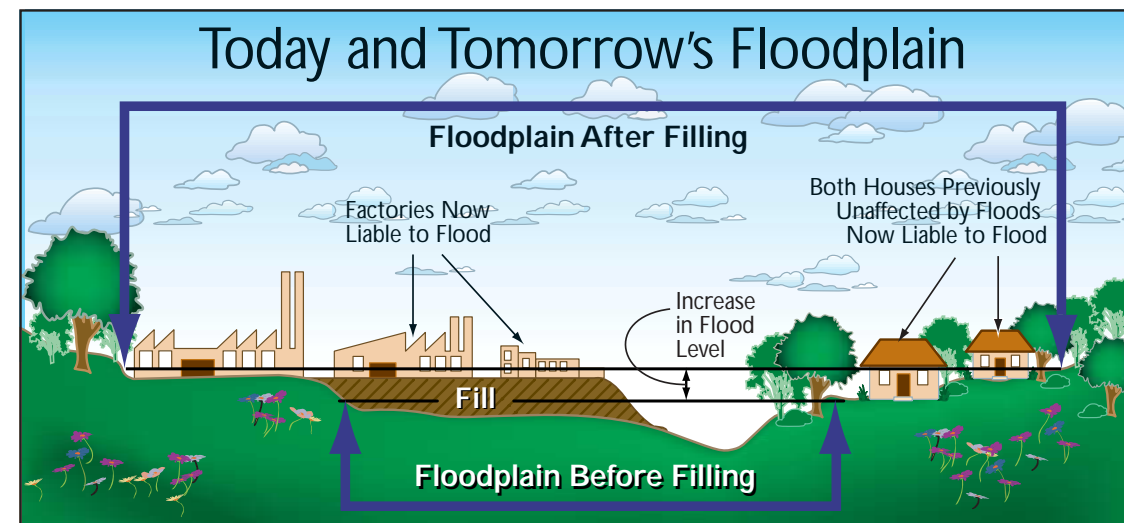
The Comprehensive Stormwater Management Objectives for DuPage County, Illinois include:

- Reduce the existing potential for stormwater damage to public health, safety, life and property.
- Control future increases in stormwater damage within DuPage County and in areas of adjacent counties affected by DuPage County drainage.
- Protect and enhance the quality, quantity and availability of surface and groundwater resources.
- Preserve and enhance existing aquatic and riparian environments and encourage restoration of degraded areas.
- Control sediment and erosion in and from drainageways, developments and construction sites.
- Promote equitable, acceptable and legal measures for stormwater management.

The Crick Creek subdivision, along the Salt Creek in DuPage County, Illinois, was transformed from a residential community to a native riparian wetland through the County's Wetland Banking Program. The property is currently owned by the DuPage County Forest Preserve District.

†† Image reprinted with permission from the DuPage County Department of Development & Environmental Concerns.

Today's Flood Levels Are NOT Tomorrow's Flood Levels



If large areas of the floodplain are filled, then there will be an increase in the land area needed to store flood waters. This means your home or business may be impacted.

It is a fact that both existing and future development will experience flood depths above the current mapped flood hazard area. Current federal floodplain management regulations do not consider the increase in future flood levels that will be caused by new development. For this reason, even if the current minimum standards are followed, flooding and flood damages will continue to increase.

Sometimes new construction contributes to increasing damage from floods because it replaces land area that is naturally used to store floodwaters. The area that naturally stores flood waters is called the floodplain. As more land area is replaced with homes, businesses, industry and streets, flood waters are no longer stored in the floodplain but instead continue downstream. Construction in the floodplain and throughout the watershed increases flood flows. The result is an increase in the amount of flood water that will impact downstream communities.

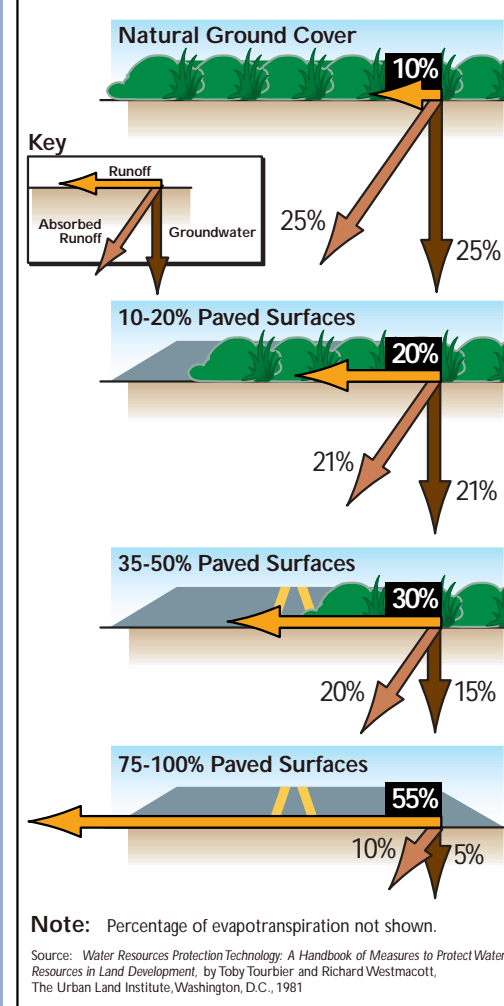
What Is Hazard Mitigation?

Mitigation refers to activities that lessen potential for future flood damages. Examples include elevating structures above the predicted flood level, enhancing the natural flood storage of a floodplain with retention basins, or updating floodplain ordinances to reflect the most recent flood data.



Elevated structure at a recreational camp

Increased Runoff from Increased Construction



Increasing the amount of paving, streets, sidewalks and roofs throughout the watershed can change a small flood into a significant flood, impacting your property.

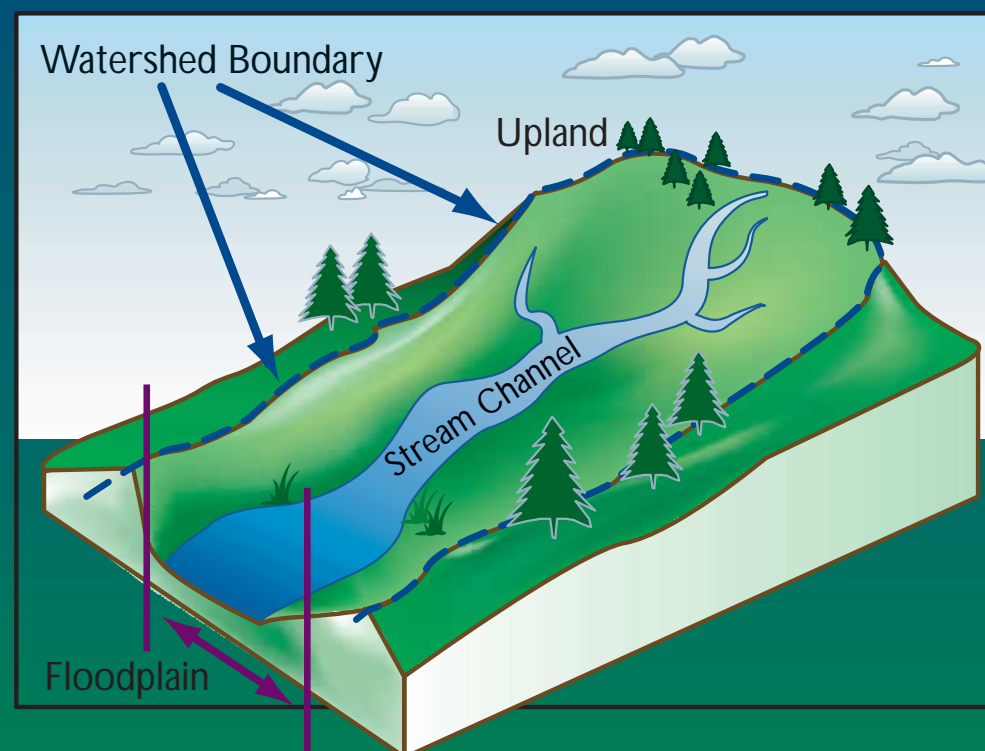
Benefits of a Natural Floodplain

- ▶ Flood Water Storage
- ▶ Enhanced Stormwater Management
- ▶ Reduced Flood Damages
- ▶ Improved Water Quality
- ▶ Recreational Opportunities and Aesthetics
- ▶ Preservation of Wildlife and Natural Habitats
- ▶ Sustained Biological Productivity
- ▶ Enhanced Erosion Control
- ▶ Opportunities for Scientific Study and Outdoor Education
- ▶ Increased Property Values
- ▶ Preservation of Cultural Resources
- ▶ Sustained Economic Prosperity
- ▶ Maintenance of Natural Products



What Is A Watershed?

A "Watershed" is the land area that drains into a specific water body such as a tributary, stream or river. A "Floodplain" is the part of a watershed that stores and transports flood waters. Floodplains are dynamic - today's floodplain is not tomorrow's floodplain.



All land area in the watershed drains toward the stream channel; construction in any part of the watershed can impact other properties.

A Community Plan For A Watershed Or Floodplain Would:

- Include a technical analysis to quantify current and future flooding conditions.
- Incorporate mitigation techniques to minimize impacts.
- Identify implementation measures to manage all of the hazard factors identified.
- Provide a vision for future use of the community's land within and outside the floodplain.

For More Details on the No Adverse Impact Policy

- *No Adverse Impact: A New Direction in Floodplain Management Policy*, by Larry Larson and Doug Plasencia. Journal of Natural Hazards Review, Fall 2001; www.floods.org; (608) 274-0123
- “No Adverse Impact Floodplains: A White Paper,” ASFPM, June 2000; www.floods.org; (608) 274-0123
- “ASFPM Introduces a New National Standard,” *ASFPM News & Views*, August 2000; www.floods.org; (608) 274-0123
- *National Flood Programs in Review - 2000*, ASFPM; www.floods.org; (608) 274-0123

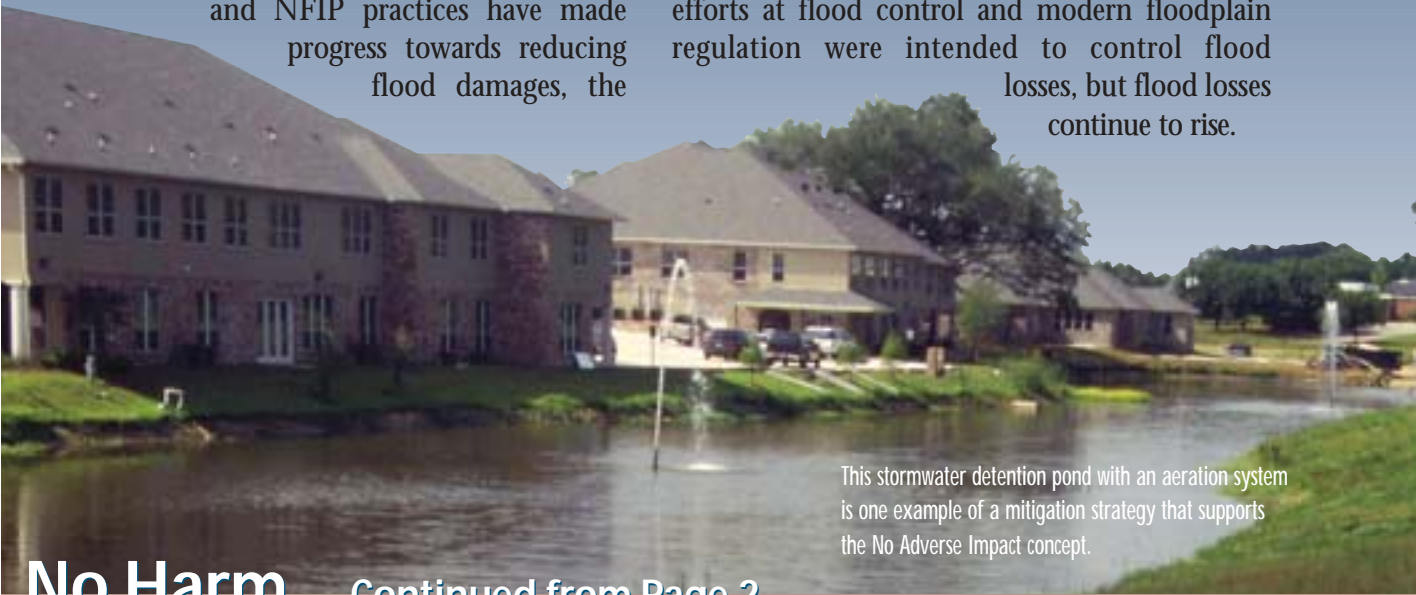
For More Information on the NFIP, Flood Hazards and The Natural Benefits of Floodplains:

- *Evaluation of CRS Credited Activities During Hurricane Floyd*, FEMA, September 2000, www.fema.gov; 1-800-561-3356
- *A Unified National Program for Floodplain Management*, Federal Interagency Floodplain Management Task Force, March 1994; www.fema.gov; 1-800-561-3356
- *Using Multi-Objective Management to Reduce Flood Losses in Your Watershed*, Environmental Protection Agency and ASFPM, 1996; www.floods.org; (608) 274-0123
- “Flood Mitigation Planning - The First Steps: A Training Video for Communities,” Public Entity Risk Institute and ASFPM, September 2000; www.floods.org; (608) 274-0123
- “Flood Mitigation Planning: The CRS Approach,” Natural Hazards Informer, July 1999; www.colorado.edu/hazards/informer
- *Protecting Floodplain Resources: A Guidebook for Communities*, Federal Interagency Floodplain Management Task Force, June 1996; www.fema.gov; 1-800-561-3356
- “Answers to Questions about the National Flood Insurance Program,” (FIA-2), November 1997; www.fema.gov; 1-800-561-3356
- “How to Use a Flood Map to Determine Flood Risk for a Property,” (FEMA 258), May 1995; www.fema.gov; 1-800-561-3356

Losses Worsening... Continued from Page 1

This trend is unnecessary. It is primarily due to federal policies that have encouraged at-risk development, justified flood control projects that intensify land use within the floodplain and encouraged state and local governments to rely on federal resources for both flood control and disaster recovery. While current flood control and NFIP practices have made progress towards reducing flood damages, the

damages continue to rise. Recent focus on mitigation and enhanced funding for mitigation is helping to alleviate some of the more obvious problems with existing structures being flooded, but the nation has yet to come to grips with how to stop creating future flood problems caused by new development. The nation's extensive current efforts at flood control and modern floodplain regulation were intended to control flood losses, but flood losses continue to rise.



This stormwater detention pond with an aeration system is one example of a mitigation strategy that supports the No Adverse Impact concept.

Photo by Rod E. Emmer

No Harm... Continued from Page 2

The No Adverse Impact approach promotes fairness, responsibility, community involvement, pre-flood planning, sustainable development, and local land use management. It gives local governments the responsibility to manage floodplain risks. Individual communities will determine the specific details appropriate for land use in their community. It also supports private property rights because property owners will have input on management

strategies that impact their property. NAI protects the property rights of those who would be adversely impacted by the actions of others.

The Association of State Floodplain Managers proposes the No Adverse Impact approach as the default management criterion throughout the United States. When local comprehensive watershed management plans incorporate the No Adverse Impact approach, impacts will be

allowed only to the extent that they are offset by mitigation. When no local plan exists, all federal and state actions in the floodplain would strive to achieve no adverse changes in hydrology, stream depths, velocities, and sediment transport functions. Having these local comprehensive watershed management plans on file with state agencies would qualify the individual community for certain types of funding to implement mitigation techniques.

“Every day we come down here to look at the flooding and thank God we built that high.” - Property owner on the Mississippi River in LaCrosse, Wisconsin, regarding the state agency requirement to build one foot above the flood of record.[†]

For additional copies of A Common Sense Strategy or to tailor the document for your community, contact:

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A Common Sense Strategy

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Return On Investment

Acquisition and relocation of flood-prone buildings is a very effective tool for reducing flood losses. In just three years, the cost of relocating buildings out of the floodplain was saved in damages avoided.^{††}

[†]Reprinted with permission from The Associated Press

^{††}*Evaluation of CRS Credited Activities During Hurricane Floyd*, FEMA, September 2000